

CRAB Systemic Safety Project Selection Tool  
Additional Data Elements for Mobility©

**To:** SSPST Workgroup  
**From:** Eric Hagenlock  
**Subject:** SSPST Workgroup Meeting  
**Date:** December 18<sup>th</sup>, 2014  
**Time:** 1:30 PM – 3:00 PM  
**Location:**  
CRAB Board Room  
2404 Chandler Court SW, Ste 280  
Olympia, WA 98502  
**Teleconference:**  
Phone #: 360.407.3780  
Pin: 289103#

**Agenda**

- Item 1 – Introductions
- Item 2 – Project Overview and Status
- Item 3 – Additional Data Elements Review (See Appendix A & B)
- Item 4 – Conclusion: Next Steps

# Appendix A: Workgroup Suggestions for Additional Elements

## Recommendations from Counties (Cowlitz, Lewis, and King)

- Horizontal Curves
  - Point of curve
  - Radius
  - Length of Approach Tangent
  - Grade of Approach Tangent
  - Superelevation
  - Recommended speed from ball-banking
- Intersections
  - Skew Angle
  - Number of Legs
  - Means to identify offset intersections (distance and direction of offset)
  - Intersection spacing
  - Intersection within or near vertical curves/grades
  - Pavement/Curb radii
  - Sight Distance
- Vertical Curve (What about them?)
- Accidents on State highways that happen at intersection with county road
- Pavement Markings (Do we need more info then what is in Mobility's Striping inventory?)
- Roadside hazards, especially rivers, lakes, and other waterways (What about them?)
- Passing Zones (Can striping accomplish this?)
- 85<sup>th</sup> Percentile (may be in Mobility already)

## FHWA Suggested Risk Factors Not Already in Mobility© or Suggested by Workgroup

- Presence of automated enforcement
- Adjacent land use type, such as schools, commercial, or alcohol-sales establishments
- Location and presence of bus stops

# Appendix B: MIRE Recommended Attributes and Mobility@ Striping Inventory

## MIRE Recommendations for Horizontal & Vertical Curves

### II.a. Horizontal Curve Data

#### 107. Curve Identifiers and Linkage Elements

**Definition:** All elements needed to define location of each curve record and all elements necessary to link with other safety files.

**Attributes:** Route and location descriptors (e.g., route and beginning and ending milepoints or route and beginning and ending spatial coordinates). Must be consistent with other MIRE files for linkage.

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

#### 108. Curve Feature Type

**Definition:** Type of horizontal alignment feature being described in the data record.

**Attributes:**

- Horizontal angle point (i.e., joining of two tangents without a horizontal curve)
- Independent horizontal curve
- Component of compound curve (i.e., one curve in compound curve)
- Component of reverse curve (i.e., one curve in a reverse curve)

See [Figure 5](#) for additional detail.

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

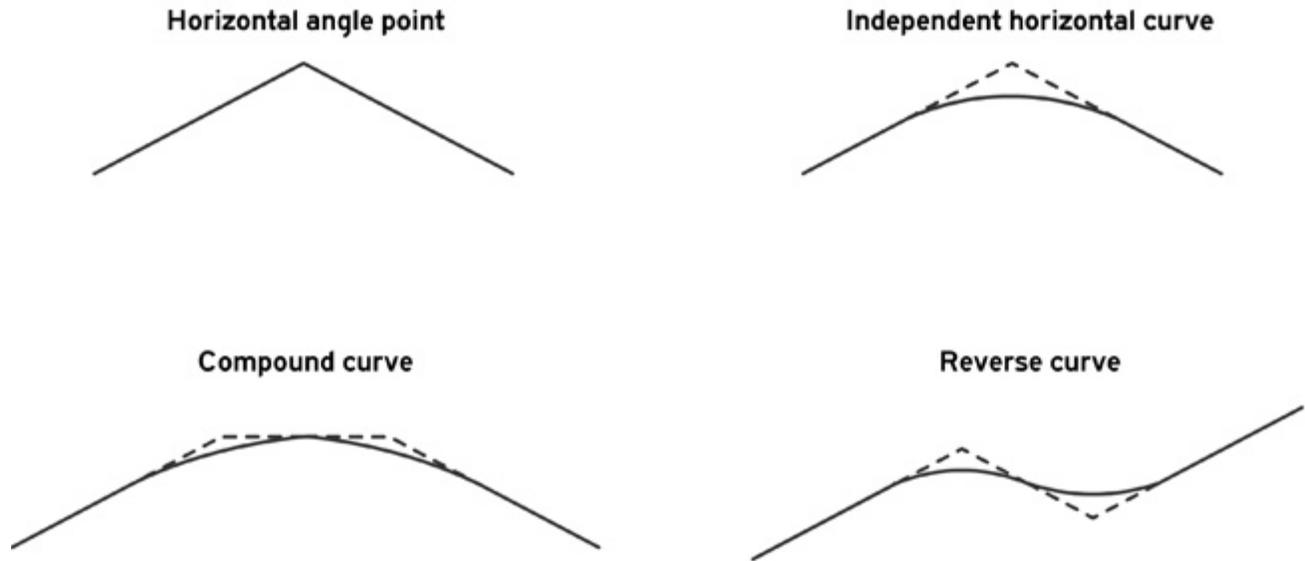


Figure 5. Illustration of Types of Curve Features.

## 109. Horizontal Curve Degree or Radius

**Definition:** Degree or radius of curve.

**Attributes:** Numeric, feet if radius

**Priority:** Critical

**HPMS/Tool Requirements:** HPMS (Sample\*), HSM/IHSDM (Required)

## 110. Horizontal Curve Length

**Definition:** Length of curve including spiral.

**Attributes:** Feet

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

## 111. Curve Superelevation

**Definition:** Measured superelevation rate or percent.

**Attributes:** Rate/percent

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

## 112. Horizontal Transition/Spiral Curve Presence

**Definition:** Presence and type of transition from tangent to curve and curve to tangent.

**Attributes:**

- No transition
- Spiral transition
- Other transition

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

## 113. Horizontal Curve Intersection/Deflection Angle

**Definition:** The angle between the two intersecting tangents in the direction of inventory (sometimes called the "deflection angle"). Code only for Horizontal Angle Points; not applicable if there is a curve joining the tangents.

**Attributes:** Degrees (absolute value)

**Priority:** Critical (only for Horizontal Angle Points)

**HPMS/Tool Requirements:** None

## 114. Horizontal Curve Direction

**Definition:** Direction of curve in direction of inventory.

**Attributes:**

- Right
- Left

**Priority:** Critical

**HPMS/Tool Requirements:** None

## II.b. Vertical Grade Data

### 115. Grade Identifiers and Linkage Elements

**Definition:** All elements needed to define location of each vertical feature and all elements necessary to link with other safety files.

**Attributes:** Route/linear reference system descriptors (e.g., route and beginning and ending milepoints or route and beginning and ending spatial coordinates). Must be consistent with other MIRE files for linkage.

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

## 116. Vertical Alignment Feature Type

**Definition:** Type of vertical alignment feature being described in the data record.

**Attributes:**

- Vertical angle point (i.e., joining of two vertical gradients without a vertical curve)
- Vertical gradient
- Sag vertical curve (i.e., vertical curve that connects a segment of roadway with a segment of roadway that has a more positive grade)
- Crest vertical curve (i.e., vertical curve that connects a segment of roadway with a segment of roadway that has a more negative grade)

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

## 117. Percent of Gradient

**Definition:** Percent of gradient. Leave blank if record concerns a sag or crest vertical curve.

**Attributes:** Percent

**Priority:** Critical

**HPMS/Tool Requirements:** HPMS (Sample\*), HSM/IHSDM (Required)

## 118. Grade Length

**Definition:** Grade length if [116. Vertical Alignment Feature Type](#) is "Vertical gradient." Length does not include any portion of a vertical curve. Leave blank if record concerns a sag or crest vertical curve.

**Attributes:** Feet

**Priority:** Critical

**HPMS/Tool Requirements:** HSM/IHSDM (Required)

## 119. Vertical Curve Length

**Definition:** Vertical curve length if [116. Vertical Alignment Feature Type](#) is "Sag vertical curve" or Crest vertical curve. ⚠️

**Attributes:** Feet

Priority: Critical

HPMS/Tool Requirements: None

## Mobility© Striping Inventory

### Attributes

- Road Number
- From Milepost
- To Milepost
- Striping Condition
- Delineation Condition
- Centerline Configuration
- Centerline ReflectORIZED
- Centerline Delineators
- Edge Configuration
- Edge ReflectORIZED
- Edge Delineators
- Lane Configuration
- Lane ReflectORIZED
- Lane Delineators
- Other Configuration
- Other ReflectORIZED
- Other Delineators
- Comment

Reference Information			
Road Number:	<input type="text" value="63551"/>	Road Name:	<input type="text" value="BATUM RD"/>
From Milepost:	<input type="text" value="1.956"/>	From:	<input type="text" value="0.184 mi. South of GERING RD"/>
To Milepost:	<input type="text" value="2.191"/>	To:	<input type="text" value="269 ft. North of GERING RD"/>

Description	Maintenance	GIS	
Conditions			
Striping:	<input type="text" value=""/>	Delineation:	<input type="text" value=""/>
Configuration      ReflectORIZED      Delineators			
Center Line:	<input type="text" value="LNP Left No Pass"/>	<input type="text" value=""/>	<input type="text" value=""/>
Edge:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
Lane:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
Inside:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
Other:	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
Comment:	<input type="text" value=""/>		